



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/812,831

03/30/2004

Santosh Pasha

U 015119-4

3116

140

7590

04/21/2006

EXAMINER

KOSAR, ANDREW D

LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NY 10023

ART UNIT

PAPER NUMBER

1654

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,831

Applicant(s)

PASHA ET AL.

Examiner

Andrew D. Kosar

Art Unit

1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 18-27 is/are pending in the application.
- 4a) Of the above claim(s) 2,9 and 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/5/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-9 and 18-23 and new claims 24-27 are pending. Claims 10-17 stand cancelled.

Election/Restrictions

Applicant's election of Group I (Orn-Pro), and the species L-Abrine-Orn-Pro, in the reply filed on April 3, 2006 is acknowledged. Applicant has not indicated with/without traverse, and thus, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Applicant's elected species is readable upon claims 1, 3-8 and new claims 24-27.

Claims 2, 9 and 18-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 3, 2006.

The examiner determined that the elected species was found to be free of the art. The examiner extended the search through the species of claim 5, group (a), and determined that the species recited are free of the art. The examiner extended the search within the elected invention to the X moieties of claim 3, and also determined the conjugates with Orn-Pro to be free of the art. Please note, the species indicated as free of the art have been interpreted as being normal tripeptide compounds, as implied by the 'line-bond' present between the amino acids.

The examiner extended the search to embrace the genus peptides having the structure Xaa-Orn-Pro, Xaa being a heterocyclic amino acid, Pro. The species is readable upon **claims 1, 4, 6-8, 24 and 26**.

Information Disclosure Statement

Applicant's IDS submitted May 5, 2005 has been considered. References not in English have been considered insofar as the English language Abstract supplied by Applicant.

The listing of references in the specification (pages 25-27) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

Claims 1, 3-5 and 26 are objected to for the following reason:

Claim 1 and 26, while understood to be a compound of the formula $X-CX_1NH-AA_1-CONH-AA_2$, currently recites "A peptide derivative peptidomimic having", which is excessive verbiage, and can be simplified to "A compound having the formula" to improve the clarity of the claim.

Claims 1 and 3-5 each recite various compounds, however the spacing and/or commas between the compounds, and those within the compounds should be corrected. A comma within

Art Unit: 1654

a compound name should not be followed (or preceded) by a space, so as to distinguish the individual chemical names more clearly.

Claim 5 recites multiple periods through the claim, e.g. the end of Group (c). MPEP § 804.01(m) states that, "Each claim begins with a capital letter and ends with a period. Periods may not be used elsewhere in the claims except for abbreviations. See *Fressola v. Manbeck*, 36 USPQ2d 1211 (D.D.C. 1995)."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-8 and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically:

Claim 1 recites, "A peptide derivative peptidomimic having general formula X-CX₁NH-AA₁-CONH-AA₂, wherein X is a heterocyclic or unusual amino acid, X₁ is O or H₂ and AA₁ and AA₂ are amino acids" and is unclear and indefinite for the following reasons:

The term "unusual" is a relative term which renders the claim indefinite. The term "unusual" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

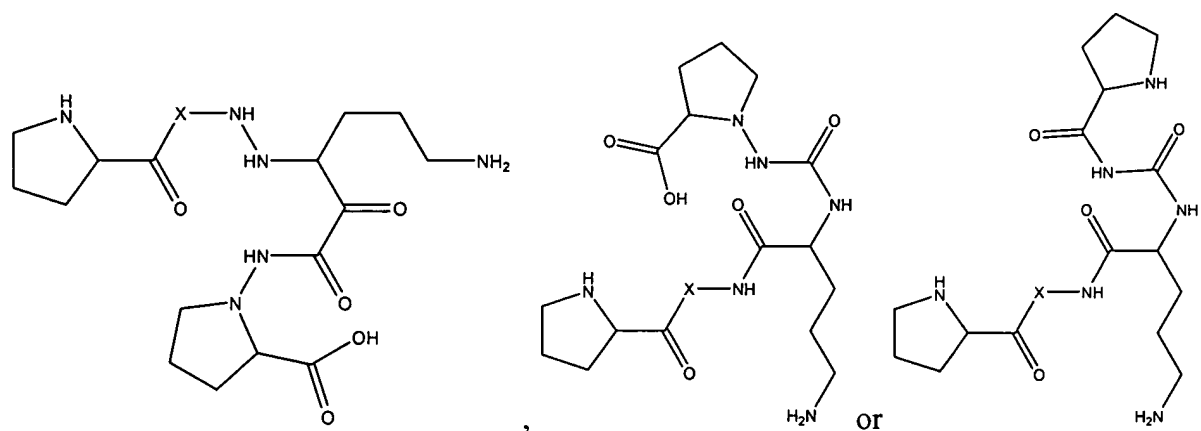
X₁ is unclear, as dihydrogen (H₂) cannot be interposed between C and NH. C(X)-NH is chemically interpreted as X being pendant to C, while CX-NH is interpreted as being part of the chain, i.e. C-X-NH.

Art Unit: 1654

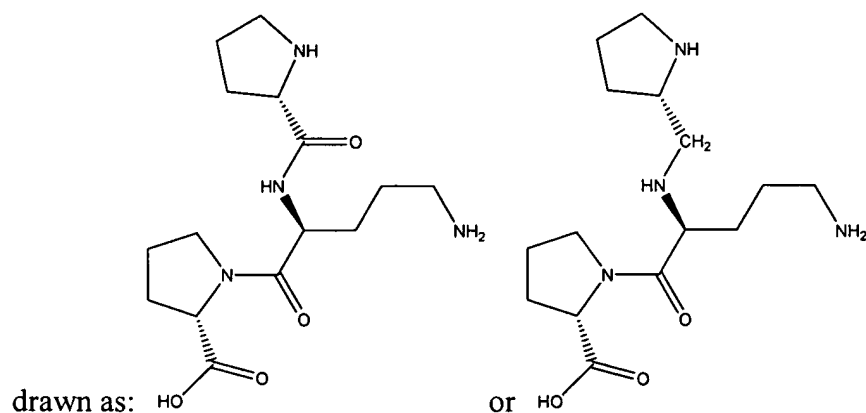
Further, it is unclear whether $X-CX_1$ defines the heterocyclic amino acid, or whether CX_1 is interposed in some manner between X and NH .

It is unclear whether Applicant intended $-NH-AA_1$ or $-CO-$ to define the amino acid(s), as interpreted by claim 5, or whether the amino acids are interposed between the NH and CO groups in some alternative fashion. Alternatively, claims 4-8 lack clear antecedent basis, as they recite standard peptides without interposed $NHCO$ groups.

Specifically, Proline- CX_1 -NH-Ornithine-CONH-Proline is structurally different from Pro-Orn-Pro, where the amide bonds are implied, as the first interpretation can be drawn as:



which are three significantly different structures (X being the CX_1 moiety); whereas assuming the compound is describing a normal peptide/peptidomimetic compound the structure would be



However, which interpretation is correct is unclear, as both alternatives maintain support in dependent claims, with the second being the predominant interpretation, particularly finding support in the figures and specification, where standard peptide synthesis is discussed. Applicant is suggested to amend the claims to recite as the formula, e.g. $Xaa-AA_1-AA_2$ and describe that the bond between Xaa and AA_1 is either $C(O)-NH$ (a standard peptide bond) or CH_2-NH (a peptidomimetic bond).

Claim 4 is indefinite because it recites "position AA_1-AA_2 ", and there is insufficient antecedent basis for this limitation in the claim. Claim 1 recites $X-CX_1NH-AA_1-CONH-AA_2$, and does not provide sufficient support for the recitation AA_1 bonded directly to AA_2 .

Claim 6 is unclear and indefinite because it recites, "displays" ACE inhibiting activity. It is unclear how a compound 'displays' anything, including activity, especially in the absence of any active step, as would be found in a proper method claim. It appears that Applicant is intending to recite a property that the compound possesses, e.g. the compound inhibits ACE.

Claim 7 is unclear and indefinite because while being a compound claim, the claim recites what appears to be an assay for determining IC_{50} values which requires 'using' HHL. It is unclear how one 'uses' HHL to determine which compounds are, or are not, commensurate with the claim. Furthermore, micromole ($\mu mole$) is not a unit of concentration, but rather describes the number of molecules one is in possession of. Micromolar (μM) is a unit of concentration ($\mu moles/unit\ volume$).

Claim 8 recites, "effectively" which is a relative term that renders the claim indefinite. The term "effectively" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably

Art Unit: 1654

apprised of the scope of the invention. Additionally, claim 8 recites, “the synthesized ACE inhibiting peptidomimic...” which lacks antecedent basis, as claim 1 does not provide support for ‘the synthesized ACE inhibiting peptidomimic’.

Claims 6-8 recite, “A peptidomimic compound” and claims 2-5 recite “A peptide derivative”, however claim 1 recites, “A peptide derivative peptidomimic”, and thus claims 2-8 lack clear antecedent basis, as claim 1 does not provide support for delineation of two apparently separate species, “a peptide derivative” and/or “a peptidomimic”, particularly since claims 24 and 26, also depending from claim 1, recite “a peptide derivative peptidomimic”. Additionally, please note, the term of the art is peptidomimetic, and not peptidomimic.

Alternatively, it is unclear whether claim 1 is defining multiple types of compounds, e.g. peptide derivatives and/or peptidomimetics, and if so, does the structural formula only apply to peptidomimetics?

Claim Rejections - 35 USC §§ 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6-8, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by
or, in the alternative, under 35 U.S.C. 103(a) as obvious over ONDETTI (US Patent 3,823,337).

Art Unit: 1654

The claims, in view of the elected invention, are drawn to compounds having an Xaa-Orn-Pro core, Xaa being a heterocyclic or 'unusual' amino acid. This rejection is set forth in the interpretation that the claims are drawn to peptides that have a 'normal' peptide backbone.

Ondetti teaches a peptide having the structure heterocyclic-Orn-Pro (-Pro-Orn-Pro-), specifically pGlu-Trp-Pro-Orn-Pro-(Nle,Gln)-(Ile,Phe)-Pro-Pro (claim 9), and compounds 82-85 (column 5). Pro is a 'heterocyclic' amino acid. The compounds of Ondetti are enzymatic inhibitors of angiotensin I converting to angiotensin II (Abstract).

Please note, 'having' is open and does not preclude the presence of additional amino acids, so long as the requisite features are present, in this case the core Xaa-Orn-Pro.

MPEP § 2112 (III) states,

"Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." *In re Best*, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

In the instant case, while Ondetti teaches compounds which anticipate claim 1, Ondetti does not teach the IC₅₀ values for the compounds.

In the absence of evidence to the contrary the disclosed prior art composition would inherently have the claimed IC₅₀ value. Since the Office does not have the facilities for examining and comparing Applicants' composition with the composition of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. *See In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Art Unit: 1654

Furthermore, "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Thus, because the compounds of Ondetti are ACE inhibitors and meet the structural limitations required by claim 1, the compounds necessarily possess the requisite biological properties, e.g. IC₅₀ concentration and effectively inhibiting ACE at 5-8 mg/kg BW, as in claims 7 and 8.

Conclusion


NO CLAIMS ARE ALLOWED.

The prior art made of record on the attached PTO-892 and not relied upon in any rejection is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew D. Kosar whose telephone number is (571)272-0913. The examiner can normally be reached on Monday - Friday 8am-430pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (571)272-0974. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew D. Kosar, Ph.D.
Art Unit 1654

BRUCE R. CAMPBELL, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

